



Course	ECE 58100 – Microwave Engineering
Type of Course	Core course for the MSE-EE specialization area
Catalog Description	In this course, analysis of microwave components and circuits in terms of scattering parameters, determination of electrical characteristics of waveguides and transmission lines through electromagnetic field analysis, design basics of microwave amplifiers and based on stability, bandwidth, gain, and noise figure criteria, generating layouts and measurement of these devices, fundamentals of antennas, and use of CAD tools in RF/Microwave circuit design will be discussed.
Credits	Cr. 3. Dual Level, Undergraduate-Graduate
Contact Hours	3
Prerequisite Courses	ECE 255 & ECE 311 (or equivalent courses)
Textbook	D.M. Pozar, Microwave Engineering, Addison-Wesley, Reading, MA, 3 rd edition, 2005.
Course Objectives	To have fundamental understanding of microwave components and circuits in terms of scattering parameters, electrical characteristics of waveguides and transmission lines through electromagnetic field analysis, basics of microwave amplifiers based on stability, bandwidth, gain, and noise figure criteria, generating layouts and measurement of these devices, use of CAD tools in RF/Microwave circuit design.
Lecture Topics	<ul style="list-style-type: none">- Microwave Components and Circuits- Two Port Networks- Scattering Parameters- Smith Chart and Its Applications- Transmission Lines- Waveguides- CAD Tools- Planar Circuits- Passive Circuits- Design basics of Amplifiers- Fundamentals of Antennas

Computer Usage	Medium
Laboratory Experience	Medium
Design Experience	Medium
Coordinator	Abdullah Eroglu, Ph.D.
Date	05/11/12